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10/698,088	10/31/2003	Naoto Kawamura	200207667-1	1012

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EXAMINER

DICHT, RACHEL S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,088

Applicant(s)

KAWAMURA ET AL.

Examiner

Rachel Dicht

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/31/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 26-32 is/are allowed.
- 6) ☒ Claim(s) 1-15, and 17-25 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/31/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/31/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 23 and 25 are objected to because of the following informalities: these claims refer back to the wrong independent claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 3, 4, 6, 7, 8, 14, 15, 17, 18, 19, 20, 21, 23, 24, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Buskirk et al. (US Pat. No. 4,872,027).

In regard to:

Claim 1:

Buskirk et al. teaches a print cartridge comprising a cartridge body having a lower portion (25, Fig. 2) and a vertical wall (the wall between 37 and 20, Fig. 2), a printhead (30 and 32, Fig. 2) couple with the lower portion and a contact array comprising a plurality of contact areas disposed on the vertical wall (refer to column 4 lines 25-38, specially lines 34-38), the contact array being one of at

Art Unit: 2853

least two contact arrays each having a different pattern of contact area locations (Fig. 6 and column 6 line 68 to column 7 line 2), a portion of the contact areas of each contact array capable of providing identity information (I1 and I2, Fig. 6) for the print cartridge (refer to column 4 lines 25-38 and column 7 lines 6-12).

Claim 2:

Buskirk et al. teaches a print cartridge where the portion of the contact areas (Fig. 6) capable of providing identity information (I1 and I2 Fig. 6) are coupled to a component (I1 and I2, Fig. 5) selected from the group consisting of temperature sense resistors, Identifications bit contacts (I1 and I2, Fig. 5), inactive contacts, and ground contacts (refer to column 6 line 60 to column 7 line 8, also refer to Fig. 2, where the traces 36 on the flexible circuit 35 connect pads on the head to the corresponding pads on the vertical wall).

Claim 3:

Buskirk et al. teaches a print cartridge where one of the contact arrays in the at least two contact arrays includes a first pair of columnar arrays of contact areas (Fig. 6) and a second pair of columnar arrays of contact areas (Fig. 6) disposed on the vertical wall, the columnar arrays of each pair converging toward each other in a direction toward the lower portion of the cartridge body (Fig. 6).

Claim 4:

Buskirk et al. teaches a print cartridge where each array of contact areas (Fig. 6) includes at least one columnar array of contact areas that is substantially linear (refer to Fig. 6).

Claim 6:

Buskirk et al. teaches a print cartridge where the portion of the contact areas of each contact array capable of providing identity information (I1 and I2, Fig. 6) for the print cartridge are located in a same location in each contact array of the at least two contact arrays (I1 and I2, Fig. 6).

Claim 7:

Buskirk et al. teaches a print cartridge where in another portion of contact areas of each contact array is capable of receiving signals to operate the print cartridge and the another portion of contact areas are located in different locations in each contact array of the at least two contact arrays (Fig. 6)(refer to column 2 lines 5-11).

Claim 8:

Buskirk et al. teaches a print cartridge wherein the portion of the contact areas of each contact array capable of providing identity information (I1 and I2, Fig. 6) for the print cartridge are the same in number in each contact array.

Art Unit: 2853

Claim 14:

Buskirk et al. teaches a print cartridge comprising a housing (20 Fig. 2) mechanically interoperable with printing systems of a plurality of printing system families (21, Fig. 2), means for ejecting fluid (32, Fig. 2) disposed on the housing, and means for electrically coupling (36, Fig. 2) to a printing system, the means for electrically coupling including means for permitting identification (I1 and I2, Fig. 6) of the print cartridge and means for permitting operation of the means for ejecting fluid (R, Fig. 5) (refer to column 4 lines 18-36 and column 7 lines 6-8).

Claim 15:

Buskirk et al. teaches a print cartridge wherein the means for permitting operation of the means for ejecting fluid comprises a plurality of uniquely positioned contact areas (Fig. 5) and means for permitting identification of the print cartridge comprises a plurality of commonly positioned contact areas (I1 and I2, Fig. 6).

Claim 17:

This claim is a combination of claims 1 and 3, and is rejected on the basis set forth for claims 1 and 3 as discussed above.

Art Unit: 2853

Claims 18 and 19:

Buskirk et al. teaches a fluid ejection device wherein the first group and the second group include some of the same contact areas and where the first group and the second group do not include some of the same contact areas (refer to Fig. 6).

Claim 20:

This claim is rejected on the basis set forth for claim 2 as discussed previously. However, in this claim, the fluid ejection device includes the cartridge, housing, and nozzles.

Claim 21:

This claim is rejected on the basis set forth for claim 3 as discussed above.

Claim 23:

This claim is rejected on the basis set forth for claim 6 as discussed above.

Claim 24:

This claim is rejected on the basis set forth for claim 7 as discussed above.

Art Unit: 2853

Claim 25:

Buskirk et al. teaches a print cartridge wherein the portion of the contact areas of each contact array capable of providing identity information (I1 and I2, Fig. 6) for the print cartridge are the same in number in each contact array (refer to Fig. 6).

4. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Kline et al. (US Pat. No. 6,435,662).

Kline et al. teaches a method of making a fluid ejecting device comprising electrically connecting one of a plurality of differently patterned contact array circuits (64, Fig. 1) to a printhead (56, Fig. 6), the plurality of differently patterned contact array circuits each having a plurality of uniquely positioned contact areas and a plurality of commonly positioned contact areas (38, Fig. 1), and attaching the contact array circuit and printhead to a housing (102, Fig. 11) (refer to column 5 lines 65-67 to column 6 line 1, and column 7 lines 13-21).

5. Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Barbehenn et al. (US Pat. No. 5,363,134).

In regard to:

Claim 11:

Barbehenn et al. teaches a fluid ejection device comprising a fluid ejecting integrated circuit (26, Fig. 4) (refer to column 1 lines 48-55); a contact array (17, Fig. 2) operably connected to the fluid ejecting integrated circuit, the contact array having a plurality of uniquely positioned contact areas and a plurality of commonly positioned contact areas, wherein the commonly positioned contact areas are arranged to make electrical contact with a fluid ejection system of more than one fluid ejection system family and communicate with circuitry providing the identification information of the fluid ejecting integrated circuit, and wherein the uniquely positioned contact areas are arranged to make electrical contact with a fluid ejection system of one fluid ejection system family (refer to Figs. 1, 2, 3, and 5).

Claim 12:

Barbehenn et al. teaches a fluid ejection device wherein the housing includes a lower portion and a vertical wall, and wherein the fluid ejecting integrated circuit (20, Fig. 2) is disposed on the lower portion and the contact array (25 and 17, Fig. 2) is disposed on the vertical wall (refer to column 1 lines 25-37).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 5 and 22 are rejected under 35 U.S.C. 103(a) as being obvious over Buskirk et al. (US Pat. No. 4,872,027) in view of Childers (US Pat. No. 5,411,343).

The applied reference has a common assignee (Hewlett-Packard) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is

Art Unit: 2853

thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2). Both cases deal with an integrated circuit used on the print cartridges.

In regard to:

Claim 5:

The device of Buskirk et al. DIFFERS from claim 5 in that it fails to teach one contact array of at least two contact arrays having a width of less than about 12 mm.

However, Childers teaches the printer contact separation distance is preferably at least 5 mm (See column 3 lines 10-11).

Therefore, it would have been obvious to one having ordinary skill in the art at that time the invention was made to modify the device of Buskirk et al. to incorporate a distance of less than 12 mm as taught by Childers in order to

reduce the likelihood of manufacturing variations of the contact pads and ensure good engagement for the pair of contacts.

Claim 22:

This claim is rejected on the basis set forth for claim 5 as discussed previously. In this claim the first layout and the second layout are the first contact array and the second contact array.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kline et al. in view of Buskirk et al..

This claim is rejected on the basis set forth for claim 2 as discussed previously. However, in this claim, the fluid ejection device includes the cartridge, housing, and nozzles.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barbehenn et al. (US Pat. No. 5,363,134) in view of Buskirk et al. (US Pat. No. 4,872,027).

The device of Barbehenn et al. DIFFERS from claim 13 in that it fails to teach a fluid ejection device wherein the contact array includes a first pair of

columnar arrays of contact areas and a second pair of columnar arrays of contact areas, the columnar arrays of each pair converging toward each other in a direction toward the lower portion of the housing.

However, Buskirk et al. teaches a fluid ejection device where the contact array (33. Fig. 2) includes a first pair of columnar arrays of contact areas (Fig. 6) and a second pair of columnar arrays of contact areas (Fig..6) the columnar arrays of each pair converging toward each other in direction toward the lower portion of the housing (Fig. 6) (refer to column 6 line 48 to column 7 lines 1-2).

Therefor, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Barbehenn et al. to incorporate the columnar arrays converging toward each other as taught by Buskirk et al. for the purpose of producing reliable contact for the specific codes that identify the different types of heads mounted on the printer carriage.

Allowable Subject Matter

10. Claims 26-32 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The primary reason for the allowance of claims 26-32 is the inclusion of the limitation of:

The contact array being one selected from a group comprising a first contact array that has a first layout of contact area locations, and a second contact array that has a second layout of contact area locations, wherein a portion of the contact area locations of the first layout and a portion of the contact area locations of the second layout are different, and another portion of the contact area locations of the first layout and another portion of the contact area locations of the second layout are the same, and wherein the another portion of the contact area locations of the first layout and the another portion of the contact area locations of the second layout are coupled to provide identification information for the print cartridge.

It is this limitation found in these claims, as they are claimed in combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

11. Claim 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The primary reason for the allowance of claim 16 is the inclusion of the limitation of:

Art Unit: 2853

A print cartridge wherein the means for permitting identification of the print cartridge comprises means for sensing a temperature of the print cartridge.

It is this limitation found in ^{this claim RD} ~~each of the claims~~, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Contact Information

12. An inquiry's concerning this communication from the examiner should be directed to Rachel Dicht whose telephone number is (571) 272-8544. The examiner can normally be reached on Monday-Friday (7:00 am-3:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, can be reached on (571) 272-2149.

RD

Rachel Dicht

May 4, 2005

SHIH-WEN HSIEH
PRIMARY EXAMINER

S. Hsieh 5-4-05